AMENDMENTS TO THE SPECIFICATION:

Please replace the paragraph beginning on page 7, line 8 and extending to page 8, line 18 of the originally-filed specification with the following amended paragraph:

--Referring now to the drawings, wherein the showings are for the purpose of illustrating a preferred embodiment of the invention only and not for the purpose of limiting same, FIGURE 1 shows a novel two stage welder A with a power source 10 comprising a high speed switching power supply illustrated as inverter 12 having a three phase power supply input 14 converted by rectifier 16 into a DC rail in lines 20, 22. Output winding 30 of inverter 12 is the primary winding of transformer T having a secondary winding 32 for supplying current to a rectifier network 40. This network provides a current level through positive lead 42 and negative lead 44. A standard small inductor 50 is connected to a standard contact tip 54, through which passes a welding wire 60 that forms electrode E spaced from workpiece W to define an arc gap through which the current is passed during the arc welding process. Welder A performs many types of electric arc welding by passing a current of a preselected shape across the gap between electrode E and workpiece W. As the arc melts wire 60 and workpiece W to perform a welding operation, wire feeder 100 pulls wire from reel 102 at a speed (WFS) determined by the rotational speed of motor 104. This speed is read by a feedback tachometer 110 and is controlled by the input voltage to pulse width modulator 112 from the output of error amplifier 114. This amplifier has a first input 120 which is the voltage representing the desired wire feed speed (WFS). This speed may be controlled by an analog circuit or more appropriately from a look-up table from wave shaper 180. The input voltage 120 determines the speed of motor 104, which actual speed is monitored by tachometer 110 for comparison with the voltage on line 120. The actual speed feedback is the voltage on input line 122. In this manner, the wire feed speed is coordinated with the weld process being implemented by welder A. The current wave shape across electrode E and workpiece W is determined by software controller 130 of the type including a software pulse width modulator 132 for generating a voltage on output control line 134 at a pulse rate determined by the set frequency of oscillator 136. In this manner, the high frequency pulses on line 134 are controlled by the voltage on line 140, which voltage is the

output of a second error amplifier 150 having a first input controlled by current detecting or sensing shunt 152. The voltage on line 154 is representative of the arc current of the welding process. A command signal on line 160 is compared to the actual arc current represented by the voltage on line 154 to cause the pulse width modulator ~~152~~ 132 to follow the desired wave shape from wave shaper or generator 180 by way of command line 160. The wire feed speed to error amplifier 114 is also directed from the wave shaper or generator. The generator 180 is of the synergistic type so that both the command signal 160 and the wire feed speed signal or voltage (WFS) on line 120 are coordinated.--.

Please replace the paragraph beginning on page 8, line 21 and extending to page 10, line 5 of the originally-filed specification with the following amended paragraph:

--In accordance with the novel aspect of welder A, there is provided a switch 190 which, in practice, is a software switch having a first position 192 and a second position 194, as shown in FIGURE 1. When in position 192, wave shaper 180 is controlled by command line 182 in accordance with a first Process A from process control system 200 for Process A. In this manner, process control system 200 is connected to the synergistic wave shaper 180 to implement Process A from the wave shaper ~~80~~ 180 by way of controller 130. In a like manner, when switch 190 is in position 194, process control system 202 through command line 182 causes wave shaper 180 to implement the second Process B by way of the signal on command line 160. Thus, by shifting switch 190 between positions 192, 194, two separate welding processes are performed by welder A. Of course, it is within the present invention to have switch 190 with more than two positions so that the welder can process in sequence or in series more than two welding processes, if such operation is desired. In practice, it is preferred that only two separate weld processes be performed alternately by welder A. In accordance with another aspect of the invention, the position of switch 190 is controlled by logic on dashed line 210 from the output of cycle counter 212. The counter counts each cycle during either Process A or Process B. At the end of the count, as set by count selector 214 or count selector 216, the logic on line 210 shifts switch 190 into the other position for implementing the other weld

process. Counter 212 counts to a number CA and then shifts to Process B which is maintained until the counter counts to a number CB. Then, switch 190 shifts back to the first process, i.e. Process A. In the preferred embodiment, one of the processes is a high heat process and the other is a low process. The numbers CA and CB are essentially the same. Thus, the welding operation involves a low heat portion and high heat portion which are repeatedly implemented during the total welding process to control the performance of the welding operation whether it is STT, pulse or otherwise. As will be shown, various weld processes can be alternately selected by a counter. Indeed, the welder A can be interactive so that the shift from one process to the other is determined by parameters as distinguished from count numbers. For instance, the voltage sensor 170 produces a voltage on 172 that detects a short, which is used in FIGURE 2 for transition between the first Process A and the second Process B wherein the second process is an arc clearing process. The counts can be drastically different and the interactive parameters can be selected to shift into a preselected process after a given process transitions into a detectable weld condition.--.

Please replace the paragraph beginning on page 12, line 11 and extending to line 18 of the originally-filed specification with the following amended paragraph:

--In FIGURES 3 and 4, system 250 is schematically illustrated wherein the wave shaper generator and control 180 creates the voltage on control line 134, as previously described. The voltage controls power supply 12 which is monitored by a GMAW or FCAW welding process 252. System 250 includes a low heat weld process represented by block 260. Process A is a low heat STT weld process. In a like manner, a high heat STT weld process is represented by block 262. Counter 212 causes first STT pulses 260a to be processed as shown in FIGURE 4. After the desired number of STT pulses 260a have been counted by cycle counter 212, switch 190 is shifted into position 194 by the logic on line 210. This generates the large, or high heat, STT pulses 262a, as shown in FIGURE 4. These high heat pulses are counted in accordance with the selected number for counter 212. In this manner, the number of waveforms or cycles of low and high STT is adjusted to determine the total heat during a welding operation.--.